



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,527	12/08/2003	Junaid Ahmed Siddiqui	06354ZP USA	2963
23543	7590	08/07/2006		
AIR PRODUCTS AND CHEMICALS, INC. PATENT DEPARTMENT 7201 HAMILTON BOULEVARD ALLENTOWN, PA 181951501				
EXAMINER MARCHESCHI, MICHAEL A				
ART UNIT		PAPER NUMBER		
1755				

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/730,527

Applicant(s)

SIDDIQUI, JUNAID AHMED

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9 and 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

Art Unit: 1755

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 11-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The added limitation at the end of claim 9 is new matter because the examiner is unable to find clear support for this broadly defined limitation for the composition as claimed. Although the table in the specification might show a lower deflection of the composition using a specific abrasive, ammonium fluoride and the specific SURFYNOL surfactant, this does not provide support that the broadly claimed invention (invention that does not require the specific components, in combination, as defined in the table) has a lower deflection. In addition, the claims recite a "substantially lower deflection" and since "substantially" is not defined, the examiner is unclear as to how the specification, which defines specific numerical values for the deflection, can provide support for the generalization of "substantially lower".

Art Unit: 1755

Assuming *arguendo* about the above, the following applies:

Claims 9 and 11-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific lower deflectivity values (literal values when calculated) defined in the table for a composition that contains STYRON OX-K abrasive, ammonium fluoride and the specific SURFYNOL surfactant, does not reasonably provide enablement for the a substantially lower deflectivity (no values defined) coupled with the broad composition as claimed (no specific components defined consistent with those defined in the table). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims recite a substantially lower deflectivity and a broad composition. This encompasses any deflectivity, as long as it is lower for a composition comprising any abrasive, any fluoride salt and any acetylenic alcohol. However, the specification only teaches the use of specific components in the slurry to provide specific lower deflectivity values. Such a limited disclosure does not support the breadth of the instant claims.

Claims 9 and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low" in claim 9 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining

Art Unit: 1755

the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. What value does “low” encompass?.

The phrase “substantially lower level”, as define in claim 9, is also indefinite because the examiner is unclear as to what “substantially” encompasses, thus rendering the scope of the claim unclear.

The other claims are indefinite because they depend on an indefinite claim.

Claims 9 and 11-16 are rejected under 35 U.S.C. 103(a) as obvious over Streinz et al. (686) in view of Moeggenborg et al. (762) for the same reasons set forth in the previous office action which are incorporated herein by reference.

Claims 9 and 11-16 are rejected under 35 U.S.C. 103(a) as obvious over Mirsa et al. in view of Moeggenborg et al. (762) for the same reasons set forth in the previous office action which are incorporated herein by reference.

Claims 9 and 11-16 are rejected under 35 U.S.C. 103(a) as obvious over Pasqualoni et al. (913) in view of Moeggenborg et al. (762) for the same reasons set forth in the previous office action which are incorporated herein by reference.

Applicant's arguments filed 7/10/06 have been fully considered but they are not persuasive.

**Response to arguments based on Streinz et al. (686) in view of Moeggenborg et al. (762).**

Applicant argues that Streinz does not teach a method using the claimed combination of acetylenic alcohol and fluoride salt. The examiner acknowledges this and has applied a secondary reference to show that the use of the claimed alcohol is obvious (any arguments, if presented, based on this combination, will be addressed later).

Applicant argues that Moeggenborg et al. discloses specific surfactants and the only disclosure of an acetylenic alcohol having free hydroxyl groups (claimed material) is in the comparative example and the comparative example did not have a significant effect upon the removal of the low-k material. The examiner acknowledges that the teaching of this reference is a comparative example, however, since a reference can be used for **all** it teaches, this surfactant is **known**, irrespective of it being defined in a comparative example.

With respect to the combination, applicant states that there is absolutely no disclosure in Moeggenborg et al. that relates to deflectivity levels. Although this may be the case, the method of using the claimed composition is known from the above combination, thus it is the examiners position that the same results would be apparent absent clear evidence to the contrary.

Applicant also states that these references do not teach low deflectivity CMP process (for oxide CMP), as exemplified in the examples (apparently examples of the instant application). This is not persuasive because (1) the claims are not consistent with the examples (broader in scope) and (2) the above combination renders the claimed polishing slurry obvious (and applicant has not clearly shown evidence otherwise) and thus the deflectivity is apparent absent evidence to the contrary.

Applicant also appears to argue the rejection in view of declarations submitted 2/21/06 and 7/10/06. The examiner acknowledges these declarations, however, the declaration are not

Art Unit: 1755

commensurate in scope with the claims because the declarations use specific components and amounts that are not consistent with the claims (claims much broader). In addition, it is stated that it is Dr. Siddiqui's opinion that these results show unexpected and significant results of the present invention. This is an opinion and the declarations do not clearly establish this because they are not commensurate in scope with the claims. In addition, it should be noted that the declarations only compare the claimed specific surfactant (which is not defined by the independent claim) with only one other surfactant and this alone does not establish criticality for the claimed surfactant (a sufficient number of surfactants have not been compared to establish criticality). In addition, the examiner is unclear as to why SURFYNOL 465 is being compared with the claimed surfactant because none of the references disclose only this specific surfactant.

Notwithstanding the declarations, the only clear argument presented against this combination rejection is that one skilled in the art would be led to a choice of amphiphilic nonionic surfactant, which is outside the scope of the instant claims. The examiner disagrees because the secondary reference clearly discloses that the claimed surfactant is a known and the examiner has established clear motivation for the use thereof as the surfactant according to the primary reference. Applicant also states that Moeggenborg et al. teaches away from the present invention in view of the claimed surfactant being disclosed in a comparative example. The examiner disagrees because this reference does not teach away from using the claimed surfactant in other polishing compositions, which is the case when this reference is applied as a secondary reference. If Moeggenborg et al. was used as a primary reference, this argument would be persuasive but this reference is used to clearly show that the claimed surfactant is known, irrespective of it being defined in a comparative example.

Art Unit: 1755

In summary, applicant has not shown sufficient evidence of criticality for the composition as claimed (no specific components and amounts defined in claimed composition that is consistent with that disclosed in the declarations).

**Response to arguments based on Mirsa et al. in view of Moeggenborg et al. (762).**

Applicant argues that Mirsa et al. does not teach a method using the claimed combination of acetylenic alcohol and fluoride salt. The examiner acknowledges this and has applied a secondary reference to show that the use of the claimed alcohol is obvious (any arguments, if presented, based on this combination will be addressed later).

Applicant also argues that the only surfactant taught by Mirsa et al., is SURFYNOL 440, which is an ethoxylated surfactant. The examiner acknowledges this teaching, however, this surfactant is defined as an example and thus the reference is not only limited to this surfactant. An example is not a definite recitation of the specific material used. In view of this, the use of another SURFYNOL surfactant is obvious for the reasons defined in the previous office action, which this argument does not clearly address.

With respect to the remarks based on Moeggenborg et al., the examiner has addressed these comments above.

Applicant also states that these references do not teach low deflectivity CMP process (for oxide CMP), as exemplified in the examples (apparently examples of the instant application). This is not persuasive because (1) the claims are not consistent with the examples (broader in scope) and (2) the above combination renders the claimed polishing slurry obvious (and



Art Unit: 1755

applicant has not clearly shown evidence otherwise) and thus the deflection is apparent absent evidence to the contrary.

With respect to the declarations submitted 2/21/06 and 7/10/06, the examiner has fully addressed these declarations above.

Notwithstanding the declarations, the only clear argument presented against this combination rejection is that one skilled in the art would be led to a choice of amphiphilic nonionic surfactant, which is outside the scope of the instant claims. The examiner disagrees because the secondary reference clearly discloses that the claimed surfactant is a known and the examiner has established clear motivation for the use thereof as the surfactant according to the primary reference. Applicant also states that Moeggenborg et al. teaches away from the present invention in view of the claimed surfactant being disclosed in a comparative example. The examiner disagrees because this reference does not teach away from using the claimed surfactant in other polishing compositions, which is the case when this reference is applied as a secondary reference. If Moeggenborg et al. was used as a primary reference, this argument would be persuasive but this reference is used to clearly show that the claimed surfactant is known, irrespective of it being defined in a comparative example.

In summary applicant has not shown sufficient evidence of criticality for the composition as claimed (no specific components and amounts defined in claimed composition that is consistent with that disclosed in the declarations).

**Response to arguments based on Pasqualoni et al. (913) in view of Moeggenborg et al. (762).**

Art Unit: 1755

Applicant argues that Pasqualoni et al. does not teach a method using the claimed combination of acetylenic alcohol and fluoride salt. The examiner acknowledges this and has applied a secondary reference to show that the use of the claimed alcohol is obvious (any arguments, if presented, based on this combination will be addressed later).

Applicant also argues that this reference provides no guidance for choice of the surfactant. Although this may be the case, this does not clearly address the examiners obvious reasons defined in the previous office action (that the claimed surfactant is obvious in view of a secondary reference).

With respect to the remarks based on Moeggenborg et al., examiner has addressed these comments above.

Applicant also states that these references do not teach low deflectivity CMP process (for oxide CMP), as exemplified in the examples (apparently examples of the instant application). This is not persuasive because (1) the claims are not consistent with the examples (broader in scope) and (2) the above combination renders the claimed polishing slurry obvious (and applicant has not clearly shown evidence otherwise) and thus the deflectivity is apparent absent evidence to the contrary.

With respect to the declarations submitted 2/21/06 and 7/10/06, the examiner has fully addressed these declarations above.

Notwithstanding the declarations, the only clear argument presented against this combination rejection is that one skilled in the art would be led to a choice of amphiphilic nonionic surfactant, which is outside the scope of the instant claims. The examiner disagrees because the secondary reference clearly discloses that the claimed surfactant is a known and the

Art Unit: 1755

examiner has established clear motivation for the use thereof as the surfactant according to the primary reference. Applicant also states that Moeggenborg et al. teaches away from the present invention in view of the claimed surfactant being disclosed in a comparative example. The examiner disagrees because this reference does not teach away from using the claimed surfactant in other polishing compositions, which is the case when this reference is applied as a secondary reference. If Moeggenborg et al. was used as a primary reference, this argument would be persuasive but this reference is used to clearly show that the claimed surfactant is known, irrespective of it being defined in a comparative example.

In summary applicant has not shown sufficient evidence of criticality for the composition as claimed (no specific components and amounts defined in claimed composition that is consistent with that disclosed in the declarations).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1755

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548.

**Evidence of unexpected results must be commensurate in scope with the subject matter**

**claimed.** *In re Linder* 173 USPQ 356. Any evidence of synergism defined in the specification is not commensurate in scope with the new broad claim. In addition, the claimed invention does not show sufficient evidence of unexpected results of the claimed specific surfactant and fluoride/surfactant mixture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8/06  
MM

Michael A Marcheschi  
Primary Examiner  
Art Unit 1755